Demand for Influenza Vaccine
Economic Analysis and
Burden of Disease Assessment

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Office of Global Affairs
Shared Goal

Create regionally-based, independent, sustainable influenza vaccine production capacity in developing countries.
Strategies to Promote Sustainability

-- Technology Development
-- Technology and Know-how Transfer
-- Workforce Development and Retention
-- Regulatory Enhancement
-- Multi-Use Facilities

-- Increase Use of and Demand for Seasonal Vaccine
Increase Use of and Demand for Seasonal Vaccine

Evidence - Driven
What is Burden of Disease?

-- Incidence
  -- Influenza Like Illness (ILI)
  -- Severe Acute Respiratory Illness (SARI)
  -- Sentinel Surveillance
  -- Laboratory Confirmation

-- By Age-Groups
-- By Risk Groups (chronic disease, pregnant women,

-- Mortality
  -- Death Certification
  -- Sentinel Surveillance
  -- Use of Health System Utilization Statistics
What is Economic Burden of Disease?

-- Direct health care costs to health care systems (public and private)
  -- clinic visits, hospitalization costs, ICU costs, medication costs
-- Out of pocket expenses to individuals and families
-- Indirect costs
  -- absence from work, decreased productivity, loss of wages
  -- the costs of no care
-- Other costs
  -- Strain on fragile or strained health care systems
Economic Burden of Disease Analysis

-- Varied methods
-- Varied assumptions
-- Varied quality
-- Varied and/or challenges in interpretation or generalizability
Why Assess Burden of Disease and Analyze Economic Impact?

Local and National Decision-making, Prioritization, and Policy-making

Improved Regional and Global Understanding of Influenza
True or False?

Seasonal Influenza is a leading cause of illness or death in children in developing countries?
Location of studies reporting influenza incidence in infants (0-5 months)  

n=14  

Nair et al.,
Severe Influenza in Children 0-59 Months
Nair et. al., Lancet 378, Dec 3, 2011

<table>
<thead>
<tr>
<th></th>
<th>Influenza ALRI</th>
<th>Severe Flu ALRI</th>
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<tbody>
<tr>
<td><strong>Developing Countries</strong></td>
<td></td>
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<tr>
<td>Number of new cases</td>
<td>19 807</td>
<td>934</td>
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<tr>
<td>(thousands)</td>
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<tr>
<td>Incidence (95% CI)</td>
<td>35/1000 (22-55)</td>
<td>2/1000 (1-2)</td>
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<tr>
<td><strong>Developed Countries</strong></td>
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<tr>
<td>Number of new cases</td>
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<td>66</td>
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<td>(thousands)</td>
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<tr>
<td>Incidence (95% CI)</td>
<td>12/1000 (7-18)</td>
<td>1/1000 (1-2)</td>
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</tbody>
</table>
Comparison of Influenza to other Pathogens

- Flu pneumonia - year 2008 (Nair et al)
  - 20.45 million episodes (13%) of pneumonia
  - 1 million episodes (7%) of severe pneumonia
  - Estimated mortality from flu associated ALRI in <5y 28,000 to 111,500 (2 to 7% of pediatric ALRI deaths)

Pneumococcal pneumonia - year 2000 (O’Brien et al., 2009)
  - 13.8 million episodes (9%) of pneumonia
  - 741,000 deaths (~37%) from pneumonia in 0-<5 children

Hib pneumonia - year 2000 (Watt et al., 2009)
  - 7.9 million episodes (5%) of pneumonia
  - 292,000 deaths (~15%) from pneumonia in 0-<5 children

RSV pneumonia - year 2005 (Nair et al; 2010)
  - 33.8 million episodes (22%) of pneumonia
  - 3.4 million episodes (23%) of severe pneumonia
  - 66–199,000 (3-9%) deaths from pneumonia in 0-<5 children
True or False?

Seasonal Influenza is a leading cause of illness or death in children in developing countries?

New data is emerging since Nair’s analysis.
Location of studies reporting influenza incidence in infants (0-5 months)  

Nair et al.,
SAVE THE DATE

International Stakeholders’ Workshop
Demand for Influenza Vaccine
Economic Analysis and Burden of Disease Assessment

June 5-7, 2012
InterContinental Hotel
Bali, Indonesia
Future Stakeholders’ Workshops

- Business Planning and Partnership Development for Influenza Vaccine Manufacturers in Developing Countries – Fall, 2012
- Communications and Education for Influenza Vaccine and Vaccination – Spring, 2013
Additional Information

www.globalhealth.gov/
Topics/VaccineWorkshops